public databases information and clinical expert panel. The target population was a birth cohort in São Paulo followed for 5 years (598,474). The vaccination coverage rate was 90%, considering a four-dose schedule for 10-valent and tree-dose schedule for PCV13 as suggested by international guides. São Paulo costs and disease data was obtained from national official databases. A mandatory discounted price to the government, calculated by the ex-factory price minus 24.38% was considered to PCV13 and 10-valent. Costs and benefits were discounted at 5% annually. Outcomes were expressed as life years gained(LYG), deaths and number of disease cases avoided. Only the direct effect of vaccination and direct medical costs were considered. **RESULTS:** The analysis showed higher clinical benefits and lower costs for PCV13 prophylaxis; reduction of 7 deaths, 488 LYG and 17 cases of disease (sepsis and meningitis) and savings of BRL70,097,844(USD43,909,950) in 5 years. The total costs with events and vaccines were BRL113,902,160(USD72,576,883) and BRL137,914,893(USD87,877,465), respectively, for PCV13; and BRL113,999,789(USD71,410,542) and BRL207,915,109(USD130,239,983) for 10-valent. **CONCLUSIONS:** This study demonstrated that incorporating PCV13 in pediatric immunization routine results in reduction on mortality and morbidity with lower expected cost for São Paulo state healthcare system, showing the dominance of PCV13 regarding 10-valent.

PIN59

A COST-EFFECTIVENESS ANALYSIS OF VORICONAZOL, ANFOTERICINE B AND CASPOFUNGIN FOR INVASIVE ASPERGILOSIS PATIENTS IN PANAMA

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OBJECTIVES: Invasive aspergilosis (IA) is a mycotic disease produce by Aspergillus sp and represents the second leading cause of invasive fungal infections. The mortality rate is about 50%. The aim of this study was to assess the cost-effectiveness (CE) of voriconazol, anfotericine B and caspofungin as first line treatments for IA adult patients in Panama, from the healthcare payer's perspective. **METHODS:** A decision-tree model was used to compare costs and effectiveness of anfotericine B (comparator), caspofungin and voriconazol for a cohort of patients with IA. Effectiveness measures were: clinical success rates, mortality rates, intensive care unit (ICU) length of stay (LOS), hospital ward LOS and overall costs. Effectiveness and epidemiologic data were collected from published literature. Local costs (2011 US$) were obtained from Panama's Social Security and Hospital Oncológico Nacional official databases. The model used a 12-week time horizon and only direct medical costs were considered. Monte Carlo probabilistic sensitivity analysis (PSA) was constructed. **RESULTS:** Results showed voriconazol as the most effective and least expensive option for IA. Clinical success rate was higher with voriconazol (56.6%) compared with anfotericine B (36.4%) and caspofungin (34.2%). Mortality rates were: 34.1% with voriconazol, 50.9% with anfotericine B and 44.7% with caspofungin. Average ICU LOSs was 7.59 days with voriconazol and 9.94 and 9.81 days with anfotericine B and caspofungin, respectively. Voriconazol also obtained the shortest ward LOS (15.96 days). Overall medical costs were $13,100 with voriconazol, $17,347 with anfotericine B and $13,716 with caspofungin. CE analyses showed voriconazol as the dominant strategy. Acceptability curves showed that voriconazol would be cost-effective within <3 GDP per capita threshold. PSA outcomes support the robustness of these findings. **CONCLUSIONS:** This is the first CE study for IA developed in Panamá. Voriconazol resulted as the cost-saving option for treating IA patients in the Panamanian clinical context.

PIN60

COST-EFFECTIVENESS OF TELBIVUDINE IN FIRST LINE TREATMENT OF HBEAG-POSITIVE PATIENTS WITH CHRONIC HEPATITIS B (CHB) IN THE TURKISH HEALTH CARE SETTING

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OBJECTIVES: The aim of this study is to analyze the cost-effectiveness over 6-year duration of first line telbivudine and lamivudine treatment in HBeAg-positive chronic hepatitis B patients with low viral load at baseline in line with the Turkish reimbursement guideline for oral CHB therapies. **METHODS:** Using a decision analytical model, cost-effectiveness of telbivudine was evaluated versus lamivudine in first-line use for HBeAg-positive patients with baseline HBV DNA levels <9 log10 copies/mL in Turkish healthcare setting from National Payer's perspective in accordance with the local reimbursement guideline for oral CHB treatments based on roadmap concept. Primary measure of effectiveness was undetectable HBV DNA level by polymerase chain reaction (PCR) assay at model duration, while costs included only cost of oral CHB drugs incurred by the Payer. Probabilities of PCR negativity and resistance rates used in the model are derived from telbivudine's head-to-head study versus lamivudine subgroup analyses outcomes for week 24 and 104; and from respective pivotal clinical studies for second line treatments. **RESULTS:** In the CE model, total oral CHB treatment cost per HBeAg-positive patient treated with lamivudine and telbivudine arm over 6 years was estimated to be 12,873€ and 11,435€ respectively. Percentage of patients remaining on lamivudine at model duration was 23%, while 50% on telbivudine. The average cost-effectiveness ratio, cost per successfully treated HBeAg-positive patient at year 6, was calculated as 15,362€ for the lamivudine arm and 13,053€ for the telbivudine arm (difference is 2,309€), and the incremental cost-effectiveness ratio was -37,859€. **CONCLUSIONS:** First line CHB treatment with telbivudine in HBeAg-positive patients has been demonstrated as a dominant cost-effective option than lamivudine in the Turkish healthcare setting. Although telbivudine has higher reimbursement price, it has been offset by superior efficacy compared to lamivudine in positive patients with baseline serum HBV DNA levels <9 log10 copies/mL and less need for more costly second line treatments.

PIN61

COST OF VIROLOGIC RESPONSE WITH TWO ACTIVE DRUGS IN THE OPTIMIZED BACKGROUND THERAPY WITH ETRAVIRINE, RALTEGRAVIR, AND MARAVIROC IN THE BRAZILIAN NATIONAL AIDS PROGRAM

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OBJECTIVES: To estimate the cost of virologic response at week 48 of treatment with etravirine (ETV), raltegravir (RAL) and maraviroc (MAV) for multi-experienced patients with 2 or more active drugs in the optimized background therapy (OBT) in the Brazilian National AIDS Program. **METHODS:** Treatment regimens of ETV and RAL were defined by the Brazilian national guidelines. Regimens with MAV were based in the same principles, although the drug is not yet reimbursed. Patients not achieving virologic response followed onto subsequent rescue treatments, defined by the guidelines. Re-treatment was not allowed. Treatment costs included cost of medication as published on the government website. The cost of MAV was defined by law. The number of multi-experienced patients receiving treatment was based on the dispensed capsules of RAL in the last 48 weeks. Virologic response was gathered from the phase III clinical trials of ETV, MAR and RAL, at week 48 for patients with two active drugs in the OBT defined by phenotypic susceptibility. **RESULTS:** The average cost of treatment at week 48 for multi-experienced patients with at least 2 active drugs in the OBT was R$ 27,243.14 with ETV, compared with R$ 27,702.91 with RAL, and R$ 31,220.72 with MAR. Given 5,627 multi-experienced patients received treatment, 862 patients failed with MAV, 544 failed treatment with RAL compared to 337 failed patients with ETV. For one third of the cohort (1.875), the total cost of treatment was R$ 58,565,276 for MAV, R$ 51,966,391 for RAL, and R$ 51,103,946 for ETV. **CONCLUSIONS:** Despite similar treatment costs, treatment with ETV compared to RAL and MAV is a more economic option for the treatment of multi-experienced patients with at least two active drugs in the OBT. At week 48, treatment with RAL and MAV was on average 2% and 15% more expensive compared to ETV, respectively.

PIN62

A MULTIDISCIPLINARY SUPPORT PROGRAM IN HEPATITIS C TREATMENT: AN ECONOMIC EVALUATION

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OBJECTIVES: To develop a cost-effectiveness analysis of a multidisciplinary support program (MSP) versus the conventional approach in the Hepatitis C (HC) treatment. **METHODS:** A total of 278 mono-infected naive HC patients were included: 131 in the MSP group and 147 patients were conventionally controlled (control group). All patients were treated with Peg-IFN-alfa-2a/ribavirin. The MSP team not only included hepatologists and nurses, but also, pharmacists, psychologists and assistants. Standard patient education, open and flexible visits scheduling, continued psychiatric evaluation and active medication control were carried out in the MSP. Treatment adherence, sustained virological response (SVR), and health resources use were evaluated. A Markov model for a lifetime horizon with seven health states and from the Spanish NHS perspective was developed. Transition probabilities and health states utilities were obtained from published literature. Costs were obtained from the Catalogue of Medicinal Products and from Spanish studies and databases (€-2010). 3.5% annual discount for costs and outcomes was applied. **RESULTS:** In the MSP group treatment compliance was higher than in the control group (94.6% vs 78.9%, p=0.0001). SVR was higher in the MSP group than in controls for all genotypes (77.1% vs. 61.9%, p=0.006), G-1/4 (67.7% vs 48.9%, p=0.02), and G-2/3 (87.7% vs. 81.4%, NS). For all genotypes, the cost per patient (including cost of drugs, health professionals and disease long-term complications) was €13,319 in MSP group and €16,184 in control group, furthermore, MSP group resulted more QALYs than controls (16.317 vs. 15.814), being MSP dominant (more effective, with lower costs) compared with the conventional approach. The MSP program was also dominant in G-1/4 patients (saving €2476, increasing 0.622 QALYs/patient) and G-2/3 (saving €1417, gaining 0.208 QALYs/patient). Results were stable for 95% CI of drug doses. **CONCLUSIONS:** HC treatment with Peg-IFN-alfa-2a/ribavirin in a MSP improves the compliance and is a cost-effective strategy compared with the conventional approach.

PIN63

COST-EFFECTIVENESS ANALYSIS OF ANTI-PNEUMOCOCCAL VACCINES IN PANAMA

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OBJECTIVES: In 2010, there were more than 1500 illness related to Streptococcus pneumonia infections in pediatric population under 2 years old in Panamá. Currently, in Panamá, Prevenar 7 is the anti-pneumococcal vaccine (PCV) used. The aim of this study was to estimate the cost-effectiveness and cost-utility of immunization strategies based on pneumococcal conjugated vaccines (PCVs) in Panamá, from an institutional perspective. **METHODS:** A decision tree steady state model

was used to assess the population level public health and economic impact of infant anti-pneumococcal vaccination. The alternatives compared were: no vaccination (comparator), PCV-7, PCV-10 and PCV-13. The effectiveness measures were: child illness avoided, life years gained (LYs) and quality-adjusted life years (QALYs) gained. Effectiveness and utilities were obtained from literature. Local costs (expressed in 2011 $US) and epidemiology (data from 2009-2011) were obtained from Panamá's official databases. Univariate sensitivity analysis was performed. The time horizon for total costs was one year and for outcomes was lifetime with a discount rate of 3%. **RESULTS:** Results show that immunization is cost-saving against no-vaccination. PCV-13 gained the highest number of QALYs (305) against PCV-10 (191) and PCV-7 (168). PCV-13 prevented 629 illnesses and gained 334 LYs. PCV-10 and PCV-7 prevented 392 and 359 illnesses and gained 208 and 182 LY's, respectively. Total costs of illness with PCV-13, PCV-10, PCV-7 and no vaccination were $622,445, $777,878, $804,978 and $1,005,512, respectively. These results were robust to variations in herd immunity and impact adjustments of PCV-10 immunogenicity. **CONCLUSIONS:** This is the first cost-effectiveness study for anti-pneumococcal immunization in Panamá. Immunization strategies based on 7, 10 and 13-valent PCV's may be cost-saving interventions compared to no vaccination. PCV-13 dominates PCV-10 and PCV-7.

PIN64

COST-EFFECTIVENESS ANALYSIS OF ANTI-PNEUMOCOCCAL VACCINES IN GUATEMALA

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OBJECTIVES: . Pneumococcal bacteremia and pneumonia are priority diseases for public health in Guatemala since these are among the 10 most frequent causes of hospitalizations and mortality in children under 4 years old. The aim of this study was to estimate the cost-effectiveness of immunization strategies based on pneumococcal conjugate vaccines (PCVs) in Guatemala, from an institutional perspective. **METHODS:** . A decision tree steady state model was used to assess the population level public health and economic impact of infant anti-pneumococcal vaccination. The alternatives compared were: no vaccination (comparator), PCV-10 and PCV-13. The effectiveness measures were: illness avoided life years gained (LYs) and quality-adjusted life years (QALYs) gained. Effectiveness and utilities were obtained from literature. Local costs (expressed in 2011 $US) and epidemiology (data from 2009-2011) were obtained from Guatemala's official databases. Univariate sensitivity analysis was performed. The time horizon for total costs was one year and for outcomes was lifetime with a discount rate of 3%. **RESULTS:** . Results show that immunization is cost-saving against no-vaccination. PCV-13 gained more QALYs (7,569) against PCV-10 (5,824). PCV-13 prevented 5658 illnesses and gained 8404 LYs, while PCV-10 prevented 4140 illnesses and gained 6465 LYs. Total costs of illness with PCV-13, PCV-10 and no vaccination were $2,599,952, $3,071,811 and $5,534,657, respectively. These results were robust to variations in herd immunity and impact adjustments of PCV-10 immunogenicity. **CONCLUSIONS:** . This is the first cost-effectiveness study for anti-pneumococcal immunization developed in Guatemala. Immunization strategies based on 10 and 13-valent PCV's may be cost-saving interventions. PCV-13 dominates PCV-10.

PIN65

HEALTH ECONOMIC MODEL ON THE COSTS AND EFFECTS OF ROTA VIRUS VACCINATION IN GERMANY

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OBJECTIVES: Rotavirus gastroenteritis (RVGE) is one of the most frequent diseases among children aged 5 or younger. A general recommendation for rotavirus vaccination in Germany does not exist so far, leading to a vaccination rate of < 30%. This analysis simulates the cost-effectiveness of a general rotavirus vaccination in Germany using Rotarix™ from the perspective of the statutory health insurance (SHI). **METHODS:** An existing Markov model on rotavirus infection in children (published before) was adapted to the German situation. The model simulates costs and effects of rotavirus vaccination in a birth cohort of 699,301 children. In the model, vaccine efficacy rates from international clinical trials were combined with German epidemiology and cost data from the SHI perspective for 2011 (including SHI reimbursed productivity losses of parents). The model assumes a vaccination rate of 100% and discount rates of 3% for costs and effects. Results were tested for robustness using sensitivity analyses. **RESULTS:** A 100% vaccination with RotarixTM could avoid approximately 156,000 RVGE cases and associated physician visits as well as in-patient hospital stays. From the SHI perspective, this leads to cost savings of 13.6 Mio € in total. The main factors responsible for these savings are in-patient hospital stays avoided (64.1 Mio €), SHI reimbursed productivity losses of parents (19.0 Mio €) and physician visits avoided (5.4 Mio €). On the other hand, vaccination costs amount to additional 79.4 Mio €. Stability of results was most sensitive with respect to epidemiological parameters (number of RVGE cases, in-patient hospital cases) as well as productivity loss. **CONCLUSIONS:** A general™ vaccination against rotavirus in Germany can avoid severe diarrhea events in children aged 5 and younger. Additional vaccination costs for the SHI are more than outbalanced by cost savings through in-patient hospital stays, SHI reimbursed productivity loss and physician visits avoided.

PIN66

COST OF VIROLOGIC FAILURE WITH ETRAVIRINE AND RALTEGRAVIR IN THE BRAZILIAN NATIONAL AIDS PROGRAM

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OBJECTIVES: To estimate the cost of virologic failure with the treatment of etravirine and raltegravir in multi-experienced patients in the Brazilian National AIDS Program. **METHODS:** Treatment regimens of etravirine and raltegravir were defined by the guidelines of the Brazilian National AIDS Program. Upon virologic failure, subsequent treatments were defined according to the same guidelines considering new drug combinations not yet used by the patients. Treatment costs considered the cost of medication as purchased by the Brazilian government and published on their website. As maraviroc, a rescue treatment, is not yet reimbursed by the AIDS program, its price was defined by law. To estimate the total cost, patient numbers were calculated by the number of capsules of raltegravir dispensed in the past 96 weeks, and assumed the same for patients treated with etravirine. Virologic failure was gathered from the phase III clinical trials of raltegravir and etravirine at week 48 and week 96. **RESULTS:** The average cost of treatment for multi-failure patients with etravirine was on average R$ 26.692,26 at week 48 of treatment compared to R$ 26.634,15 per patient treated with raltegravir. At week 96, the average treatment cost per patient was R$ 56.810,59 for raltegravir and R$ 53.904,30 for etravirine. Given that 3.942 patients received treatment in the previous 98 weeks, around 1.301 patients will fail treatment with raltegravir and 630 with etravirine. The total cost of treating these patients is R$ 73 million for raltegravir and R$ 34 million for etravirine. **CONCLUSIONS:** Despite a similar average cost at week 48, etravirine treatment is a more economic option for the treatment of multi-failure patients compared to raltegravir, saving up to 50% of treatment costs with virologic failure patients in the Brazilian National AIDS program over 96 weeks. Virologic failure is therefore an important indicator to avoid subsequent treatment costs especially in the long-term.

PIN67

COST-EFFECTIVENESS ANALYSIS OF PEGINTERFERON ALFA-2A (40KD) IN HBEAG-NEGATIVE CHRONIC HEPATITIS B IN POLAND

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OBJECTIVES: The analysis aimed to evaluate the cost-effectiveness of 48-week therapy with peginterferon alpha-2a (PegIFNα-2a) in HBeAg-negative chronic hepatitis B (CHB) patients versus 48-week (short-term analysis) or 4-year (long-term analysis) therapy with adefovir, entecavir or lamivudine from the public payer perspective in Poland. **METHODS:** A life-time Markov model based on previously published analysis was used. States encompassed treatment response (ALT normalization), relapse, complications (compensated/decompensated cirrhosis, hepatocellular carcinoma, liver transplantation) and death. Quality-adjusted life years (QALYs) were the measure of effectiveness. Short-term efficacy assessment was based on the results of randomized clinical trials (RCTs) corrected for response duration. Long-term efficacy data for nucleos(t)ide analogues (NAs) were derived from other published models and RCTs extensions. Utilities and transition probabilities (spontaneous response, relapse, complications, death) were derived from published literature. Direct medical costs, i.e. costs of drugs and procedures used in the treatment of CHB and its complications were obtained using a survey conducted among Polish clinicians. In the base case analysis costs and benefits were discounted at a 5% and 3.5% annual rate, respectively. The robustness of the results was assessed using one-way, scenario and probabilistic sensitivity analyses. **RESULTS:** The short and long-term analysis demonstrated that the use of PegIFNα-2a increased QALYs and life years gained (LYGs) compared to all investigated NAs. In the short-term model PegIFNα-2a decreased the costs of complications treatment and increased the overall costs due to drug acquisition cost. ICERs for PegIFNα-2a vs. lamivudine, adefovir or entecavir amounted to 43,621, 6,600 and 25,166 PLN/QALY, respectively (1€≈4 PLN). In the long-term model PegIFNα-2a was cost-saving and dominated adefovir, while ICERs vs entecavir and lamivudine amounted to 5,385 and 73,857 PLN/QALY, respectively. Sensitivity analysis proved these results to be robust. **CONCLUSIONS:** Peginterferon alfa-2a is cost-effective when compared to adefovir, entecavir and lamivudine in Poland.

PIN68

COST- EFFECTIVENESS ANALYSIS OF HUMAN PAPILLOMAVIRUS VACCINATION PROGRAM IN RUSSIA

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OBJECTIVES: To estimate cost-effectiveness of the vaccination program with quadrivalent Human Papillomavirus (HPV 6, 11, 16, 18) recombinant vaccine for the prevention of cervical intraepithelial neoplasia (CIN) and cervical cancer (CC) in Russian health care. **METHODS:** Cost-effectiveness analysis of vaccination program vs no vaccination was performed. The previously published model (R. Insinga et al.) was adjusted for Russia. Rates of CIN and CC were simulated with and without vaccination in a cohort of girls 12-13 years old. Time-horizon was 24 years. 100% vaccination coverage was assumed. Direct medical costs were estimated. Outcomes measured were: the cost of averted CIN case and the cost per additional life-year saved. **RESULTS:** The cost of introducing HPV vaccination program with 100% coverage of the target audience of 12-13 years old girls is 408,16 mln € (16,282,34 bln rubles). In the absence of vaccination the costs of providing medical care to patients with CIN and CC are 160,027 mln € (6, 36 bln rubles). Therefore the overall costs in a vaccinated cohort were 481,14 mln € (16,285,25 bln rubles). HPV